

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-20 will be pending. By this amendment, claims 1-3, 5, 8, 11-13, 15, and 18 have been amended. No new matter has been added.

Objections to the Drawing

In Section 1 of the Office Action, the Examiner has objected to Figure 1 for not including text labels for Elements 1-12. Figure 1 has been replaced to address the objection.

§102 Rejection of Claims 1, 7, 11, and 17

In Section 3 of the Office Action, the Examiner has rejected claims 1, 7, 11, and 17 under 35 U.S.C. §102(b) as being anticipated by Morishima (EP 0795845). Claims 1 and 11 have been amended to address the rejection.

In the Background section of the Specification, it was disclosed that “[i]n the first mobile terminals on the market, the sound generating unit only comprised a small number of prestored melodies and/or tones, from which the user could select his or her preferred ringer or alarm signal. Some of the more recent mobile terminals of wireless telecommunication systems present the possibility of creating an own melody within the limited range of one or two octaves, whereby the tone for the melody composed by the user is preset and cannot be selected by the user.” *Background of the Specification, page 1, lines 15-21.*

To solve this problem, embodiments of the present invention provide sound generating device and method having prestored sounds. For example, the structure of sound generating

device claim 1, as presented herein, includes:

“memory means (5) for storing sounds in the form of waveforms so that each waveform corresponds to a sound, wherein each sound has a typical frequency distribution and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform;

selecting means (3) enabling the selection of a sound and a pitch for said selected sound;

calculating means (6) for calculating, on the basis of a preset calculation rule, a sound table from the samples of the stored waveform which corresponds to the selected sound;

reading means (8) for reading out a part of the samples from said calculated sound table depending on said selected pitch for said selected sound; and

output means (2) for outputting a sound on the basis of said part of samples read out from said reading means” (emphasis added)

Thus, claim 1 includes a limitation that sounds are stored in the form of waveforms, wherein each sound has a typical frequency distribution, and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform. Therefore, the sound generating device of claim 1 provides prestored sounds, such as sounds of musical instruments, human voices, animal sounds. This limitation is disclosed on page 2, lines 8-20 and page 3, line 36 to page 4, line 13 of the Specification.

Morishima provides prestored notes from which a melody can be composed. Specifically, Morishima provides a communication device that enables a user to compose melodies from prestored notes, for example, using a scale map shown in Figure 3. In the scale map, a plurality of musical tone information data and a plurality of musical note information data are stored. The musical tone information data comprise a tone name (or pitch name) of each musical tone and a tone (or pitch) name frequency. The musical note information data comprise musical notes and sound generation times (col. 3, line 66 to col. 4, line 9). According to the

commonly-used definitions in musical series, each tone (*i.e.*, do, re, *etc.*) corresponds to a fixed (single) frequency and each musical note corresponds to a certain time length (col.5, lines 13-59). In the scale map, the tone and note information is stored in a way that correspond to pairs of digital numerals, such that by receiving corresponding user input information, corresponding melodies can be composed (col. 6, line 18 to col.7, line 13).

However, embodiments of the present invention enable a user to choose any kind of sound to be generated and the pitch in which the sound is output in a simple and flexible way. Sounds, such as the sound of an instrument, the sound of a human voice, the sound of an animal or the like, are stored in the form of waveforms. That is, each stored waveform corresponds to a sound. Each sound has a typical frequency distribution, and digitally sampling such frequency distribution with a predetermined number of samples give a waveform. If a user then selects a sound and a pitch for the selected sound, a sound table is calculated on the basis of a preset calculation rule from the samples of the stored waveform, which corresponds to the selected sound. From the calculated sound table, a part of the samples is read out depending on the selected pitch for the selected sound.

Based on the foregoing discussion, it is maintained claim 1 should be allowable over Morishima. Furthermore, since independent claim 11 closely parallels, and includes substantially similar limitations as, independent claim 1, claim 11 should also be allowable over Morishima. Since claims 7 and 17 depend from claims 1 and 11, respectively, claims 7 and 17 should also be allowable over Morishima.

Accordingly, it is submitted that the Examiner's rejection of claims 1, 7, 11, and 17 based upon 35 U.S.C. §102(b) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§ 103 Rejection of Claims 2, 3, 9, 10, 12, 13, 19, and 20

In Section 4 of the Office Action, the Examiner has rejected claims 2, 3, 9, 10, 12, 13, 19, and 20 under 35 U.S.C. §103(a) as being unpatentable over Morishima.

Based on the foregoing discussion regarding claims 1 and 11, and since claims 2, 3, 9, and 10 depend from claim 1, and claims 12, 13, 19, and 20 depend from claim 11, it is submitted that claims 2, 3, 9, 10, 12, 13, 19, and 20 should be allowable over Morishima.

Accordingly, it is submitted that the Examiner's rejection of claims 2, 3, 9, 10, 12, 13, 19, and 20 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§ 103 Rejection of Claims 4-6 and 14-16

In Section 5 of the Office Action, the Examiner has rejected claims 4-6 and 14-16 under 35 U.S.C. §103(a) as being unpatentable over Morishima in view of Otsuka *et al* (U.S. Patent No. 6,021,388; hereinafter referred to as "Otsuka").

Based on the foregoing discussion regarding claims 1 and 11, and since claims 4-6 and 14-16 depend from claims 1 and 11, respectively, it is submitted that claims 4-6 and 14-16 should be allowable over Morishima. Further, since it is indicated that Otsuka teaches calculating a scale map on the basis of an interpolation calculation, it is maintained that Morishima and Otsuka, individually or in combination, fail to teach or suggest all the limitations of claim 1 or 11. Therefore, claims 4-6 and 14-16 should be allowable over the combination of Morishima and Otsuka.

Accordingly, it is submitted that the Examiner's rejection of claims 4-6 and 14-16 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-20 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

PATENT

Appl. No. 09/930,057

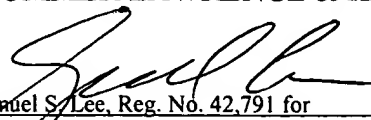
Attorney Docket No. 450117-03517

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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Attachments

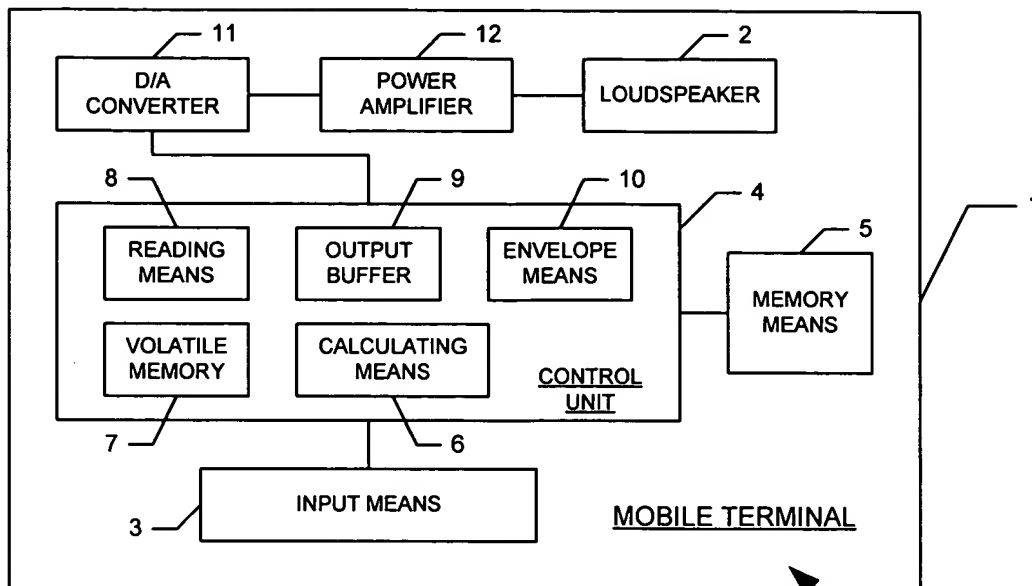


FIG. 1

Labels added for
 Elements 1-12

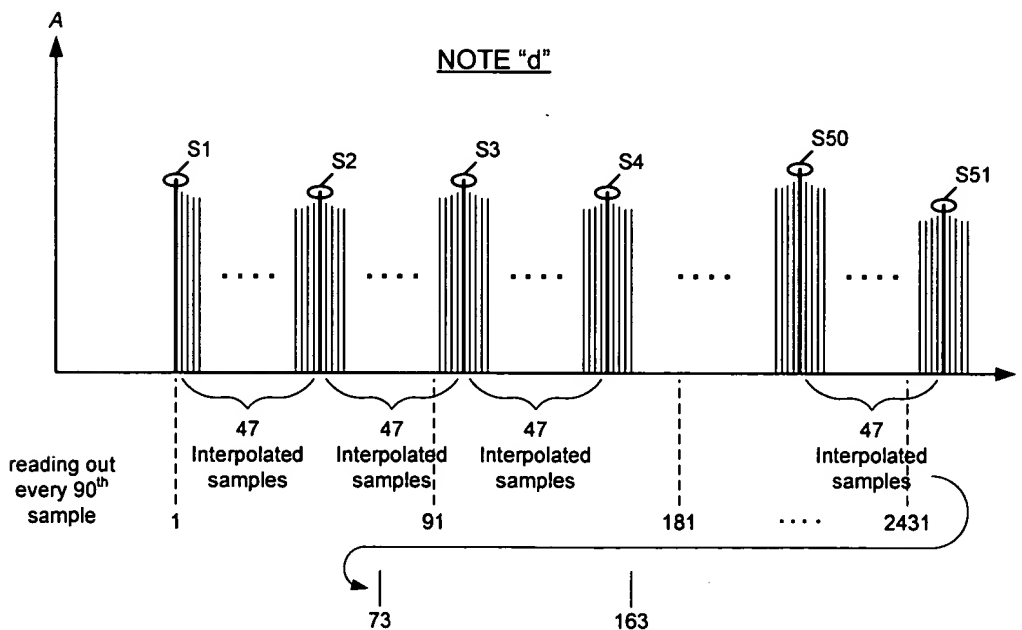


FIG. 2